REMARKS

INTRODUCTION

In accordance with the foregoing, claims 9-14 have been cancelled. Claims 1-8 are pending and under consideration.

CLAIM REJECTIONS

Claims 1-6 were rejected under 35 USC 102(b) as being anticipated by Son et al. (US 6,282,161) (hereinafter "Son").

Claims 7 and 8 were rejected under 35 USC 103(a) as being unpatentable over Son in view of Nishiwaki (US 6,704,254) (hereinafter "Nishiwaki").

Claims 9-11 were rejected under 35 USC 103(a) as being unpatentable over Son in view of Takeda et al. (US 6,754,154) (hereinafter "Takeda").

Claims 12-14 were rejected under 35 USC 103(a) as being unpatentable over Son in view of Takeda and Nishiwaki.

Son discusses an optical recording and reproducing apparatus, tilt adjusting method appropriate therefor, and recording control method. In Son, a jitter detector 34 detects the amount of jitter of the reproducing signal generated by the reproducing signal generator 32. The tilt controlling unit 36 feeds the amount of the jitter of the reproducing signal generated by the jitter detector 34 back to a tilt driving circuit unit 40 to control the tilt angle of the optical pickup 20. The output of the tilt driving circuit unit 40 is output to the tilt driving unit 30 which in turn drives the tilt driving unit 28. The tilt driving unit 28 rotates (tilts) the optical pickup support unit 24 about the fixing support 22. Son, 4:46-4:56 and Figure 2.

Further in Son, the optical pickup 20 is moved to a drive test zone located in the outer circumference of the disk, and the test signal is recorded on the drive test zone at the outer circumference of the disk, and a focus and the tracking state are optimized such that the jitter of the recording (reproduced test signal) signal is a minimum (step 708). The tilt driving unit 28 is driven to detect the output S_outrec of the displacement sensor 26 from a point in which the jitter of the recording signal is a minimum (step 710). Then, optimum displacement values S_inrec and S_outrec in which the jitter of the inner and outer circumferences, respectively, of the disk, are minimized are stored in the memory 38 (step 712). The tilt control value is calculated at the recording position by interpolation with reference to the outputs S_inrec and S_outrec stored in the memory 38 during recording of the disk (step 714). The calculated tilt adjustment value is

applied to the tilt driving unit 28 to adjust the tilt of the optical pickup to record data (step 716). Son, 7:12-7:33 and Figure 7.

Nishiwaki discusses an optical disk device, control method of optical system, medium, and information aggregate. In Nishiwaki, the optical disk device includes an objective lens 7 for condensing radiated light from a light source on an optical disk 8, an optical detecting unit for detecting reflected light from the optical disk 8, and a control unit for performing the tracking control and/or the tilt control of the objective lens 7 by utilizing the output from the optical detecting unit, in which the control unit uses the off-track quantity and/or the tilt quantity of the objective lens 7 when performing the above described control. Nishiwaki, Abstract and Figure 5.

Claims 1, 2, 7 and 8

Independent claims 1 and 7 recite: "...searching a memory in the disc drive for a tilt angle for a recording or reproducing sector of the disc in which the tilt is detected..." In contrast to claims 1 and 7, Son discusses storing optimum displacement values S_inrec and S_outrec in which the jitter of the inner and outer circumferences of the disk are minimized in memory 38 in step 712. Then a tilt control value is calculated by interpolation of the outputs S_inrec and S_outrec stored in the memory 38 in step 714. Finally, Son discusses that the calculated tilt adjustment value is applied to the tilt driving unit 28 to adjust the tilt of the optical pickup to record data in step 716. What Son does not discuss is searching a memory in the disc drive for a tilt angle for a recording or reproducing sector of the disc in which the tilt is detected. In the Office Action, the Examiner relies on step 712 of Son to discuss this feature of claims 1 and 7. However, step 712 of Son is for storing optimum tilt displacement values. In Son, those values are then used to calculate the tilt control value during the reproduction of the disk.

By contrast, claims 1 and 7 recite searching a memory in the disc drive for a tilt angle for a recording or reproducing sector of the disc in which the tilt is detected. In claims 1 and 7, once a tilt angle is detected for each of a recording and reproducing sector of the disc placed in a disc drive it can be stored and used according to a position of a pickup. As such, there is no need for repeatedly detecting the tilt angle from the same recording or reproducing sector of the same disc, so that a tilt correction of the disc drive can be effectively performed. In Son, as discussed at step 714, the tilt control value is calculated at every reproduction of the disk. Further, as pertaining to claim 7, this deficiency in Son is not cured by Nishiwaki, which was relied upon to show an optical disk control method encoded in a computer readable medium.

The technical feature of claims 1 and 7 that a tilt angle is searched from the memory and the tilt angle is stored in the memory is not discussed in Son or Nishiwaki.

Claims 2 and 8 depend on claims 1 and 7, respectively, and are therefore believed to be allowable for at least the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 3 and 4

Claim 3 recites: "...a controller that, if the tilt of the disc is detected, searches the memory for the tilt angle for the recording or reproducing sector of the disc wherein the pickup is currently positioned, and controls driving of the motor using the searched tilt angle." In contrast to claim 3, the tilt controlling unit 36 of Son feeds the amount of the jitter of the reproducing signal generated by the jitter detector 34 back to a tilt driving circuit unit 40 to control the tilt angle of the optical pickup 20. As such, tilt controlling unit 36 of Son relied upon by the Examiner does not search the memory for the tilt angle for the recording or reproducing sector of the disc where the pickup is currently positioned, but rather feeds signal of jitter detector 34 back to the driving circuit 40 to control the tilt angle. The tilt controlling unit 36 of Son does not search a memory for a tilt angle, and, as such, it is respectfully submitted that claim 3 patentably distinguishes over Son.

Claim 4 depends on claim 3 and is therefore believed to be allowable for at least the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 5 and 6

Independent claim 5 recites: "...a controller that detects the position information of the pickup based on the number of pulses for driving a second motor in the pickup moving unit and stores the position information in the memory, and if the tilt of the disc is detected by the tilt detector, searches the memory for a tilt angle for a sector of the disc from which the tilt is detected and controls driving of the first motor using the searched tilt angle." In the Office Action, the rejection of claim 5 was made on the same grounds as the rejection of claim 3. Similarly, the traversal of the rejection is comparable. In contrast to claim 5, the tilt controlling unit 36 of Son feeds the amount of the jitter of the reproducing signal generated by the jitter detector 34 back to a tilt driving circuit unit 40 to control the tilt angle of the optical pickup 20. As such, the tilt controlling unit 36 of Son relied upon by the Examiner does not search the memory

for a tilt angle for a sector of the disc from which the tilt is detected and controls driving of the first motor using the searched tilt angle, but rather feeds signal of jitter detector 34 back to the driving circuit 40 to control the tilt angle. The tilt controlling unit 36 of Son does not search a memory for a tilt angle, and, as such, it is respectfully submitted that claim 5 patentably distinguishes over Son.

Claim 6 depends on claim 5 and is therefore believed to be allowable for at least the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 9-14

Claims 9-14 have been cancelled.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: Sept 29, 2006

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